

MicroRNA423-5p, UCG were detected in all patients. Correlation analysis were initiated between parameters of UCG and expression of MicroRNA423-5p in patients of group C.

Results: Compared with group B and C, expressions of BNP and MicroRNA423-5p in group A were simultaneously increased ($P<0.001$). In comparison to groups B, expressions of BNP and MicroRNA423-5p in group C were increased significantly ($P<0.001$). In the pacemaker group, MicroRNA423-5p expression level was positively correlated with left atrial diameter, left ventricular end-systolic diameter, and left ventricular end-diastolic diameter ($r=0.359$, $P=0.044$; $r=0.513$, $P=0.003$; $r=0.623$, $P<0.001$), and negatively correlated with left ventricular ejection fraction ($r=-0.715$, $P<0.001$).

Conclusions: Elevated BNP and MicroRNA423-5p expression levels in patients with pacemaker implantation may be associated with some degree of cardiac dysfunction, and its clinical significance would be worthy of further study.

GW25-e5323

Prevalence and determinants of elevated high-sensitivity cardiac troponin I in Emergency patients with Atrial Fibrillation

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Objectives: This study was designed to evaluate the prevalence and determinants of increased high-sensitivity cardiac troponin I (hs-cTnI) as a marker of cardiac injury in emergency patients with atrial fibrillation (AF).

Methods: A total of consecutive patients with AF (52.9% males; mean age 63.3 ± 14.3 years) between May 2013 and November 2013 were evaluated by measuring the level of serum hs-cTnI along with other clinical assessments.

Results: There were 110 (17.0%) patients with a minimum serum hs-cTnI level of 0.02 ng/mL. The median hs-cTnI level was 0.006 ng/mL (0.003-0.014 ng/mL). There were significant differences in age, sex, heart rate (HR), type of AF, reason for emergency department visit, concomitant valvular heart disease, hypertension, hyperlipidemia, creatinine, creatinine clearance rate (Ccr), left ventricular end-diastolic diameter (LVEDD) and left ventricular ejection fraction (LVEF) in echocardiography between the patients with hs-cTnI <0.02 ng/mL and those with hs-cTnI ≥ 0.02 ng/mL ($P<0.05$). However, after multivariate analysis, HR (OR for increased per 1 bpm: 1.014; 95% CI 1.003-1.025, $P=0.010$), Ccr (OR for increased per 1%: 0.967; 95% CI 0.946-0.989, $P=0.003$), and LVEF ($P=0.002$) remained as the independent determinants of elevated hs-cTnI in AF.

Conclusions: The results demonstrated that hs-cTnI was elevated in a significant number of our AF patients. HR, Ccr, and LVEF can predict the elevation of hs-cTnI in AF patients.

GW25-e5380

Effect of carvedilol on store overload-induced Ca^{2+} release in pacing cardiomyocytes

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Objectives: To explore the effect of carvedilol on store overload-induced Ca^{2+} release (SOICR) in pacing cardiomyocytes.

Methods: Single rat cardiomyocyte was perfused with isoprenaline and caffeine with rapid pacing to induce calcium overload. Spontaneous calcium releases through sarcoplasmic reticulum calcium release channel (ryanodine receptor type 2, RyR_2) were investigated in fluorescent imaging study. The cardiomyocytes were assigned into control group (DMSO), carvedilol group, metoprolol group, phentolamine group and nifedipine group.

Results: In control group, the incidence of SOICR in cardiomyocytes was significantly increased under the condition of calcium overload by perfusing with isoprenaline and caffeine in addition to the enhancement of calcium transient. The incidence of SOICR in carvedilol group was significantly lower than that in control group at the pacing frequency of 1 Hz to 4 Hz (2%, 6%, 10% and 16% vs. 43.59%, 74.36%, 87.18% and 89.71%, respectively, $P<0.01$). The inhibitory effect of carvedilol was not significantly different at variant pacing frequency ($P>0.05$). The incidences of SOICR in metoprolol group, phentolamine group and nifedipine group had no significant difference compared with control group ($P>0.05$). The amplitude of calcium transient and caffeine peak of pacing cardiomyocytes had no significant difference between different groups ($P>0.05$).

Conclusions: Carvedilol effectively suppresses SOICR in pacing cardiomyocytes due to its direct inhibition on the spontaneous opening of cardiac RyR_2 channel rather than the α_1 , β_1 and L type calcium channel blockade.

GW25-e2274

The Effect of Resynchronization Therapy in Patients with Chronic Heart Failure and the Problem of Non-response

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Objectives: To Investigate the effect of cardiac resynchronization therapy (CRT) and the problem of non-response to CRT in patients with chronic heart failure.

Methods: 35 patients (22 man, 13 woman; mean age 62 years, range 47-76 years) underwent CRT. The NYHA class, LVEDD, LVEF and B-type natriuretic peptide were evaluated in each patient before implantation and 6 months after implantation. A definition of response to CRT was either improvement in NYHA class by ≥ 1 or an increase in LVEF of $>5\%$.

Results: 2 patients died and 33 survived. Among these 33 patients, The NYHA class, LVEDD, LVEF were improved significantly ($P<0.05$), and the plasma BNP level was decreased significantly ($P<0.05$) 6 months after CRT Implantation. The clinical response rate was 66% and echocardiographic response rate was 57% at 6 months follow-up. 12 patients had no response to CRT. The response rate was lower in patients with ischemic cardiomyopathy and patients with atrial fibrillation.

Conclusions: CRT is an effective treatment for chronic heart failure patients. No response to CRT may be related to the cause of heart failure and atrial fibrillation.

GW25-e4293

Evaluation of the efficacy of different ablation strategies on cavotricuspid isthmus-dependent atrial flutter

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Objectives: This study is designed to investigate the efficacy of different ablation strategies such as maximum voltage-guided (MVG) ablation, polarity reversal-guided ablation and linear ablation on patients with cavotricuspid isthmus (CTI) -dependent atrial flutter.

Methods: Thirty-four patients with typical atrial flutter were randomly divided into group A, group B and group C. In group A (12 pts) continuous linear ablation was performed at CTI. In group B (11 pts), MVG ablation was performed at CTI. In group C (11 pts) radiofrequency (RF) ablation guided by reversal of polarity was performed at CTI. In each group, when bidirectional isthmus block was not achieved after the ablation strategies, residual conduction gaps were mapped and eliminated by additional RF application. The following parameters were compared: acute success rate, recurrence rate in long-term follow-up, operation time, X-ray exposure time, number of RF applications, and total RF ablation duration.

Results: Bidirectional isthmus block was achieved in all patients except for 1 case in group C, without serious complication. There were lower mean number of RF applications (group A, 23.2 ± 8.7 ; group B, 13.4 ± 3.6 ; group C, 7.2 ± 3.1 ; $P<0.01$) and shorter total RF duration (group A, 15.4 ± 6.8 min; group B, 6.7 ± 3.5 min; group C, 5.4 ± 2.6 min; $P<0.01$) in group B and group C than in group A. Operation time (group A, 70.0 ± 45.1 min; group B, 50.8 ± 30.5 min; group C, 65 ± 38.5 min; $P<0.05$) and X-ray exposure time (group A, 15.2 ± 7.2 min; group B, 10.3 ± 6.5 min; group C, 16.3 ± 8 min; $P<0.05$) were shorter in group B than in other two groups. No difference was observed in respect of recurrence rate in long-term follow-up.

Conclusions: MVG and polarity reversal-guided ablation strategies are associated with fewer RF applications and shorter ablation duration as compared to linear ablation strategy. Furthermore, MVG ablation strategy has shorter operation and X-ray exposure time than reversal-guided ablation strategy.

GW25-e4474

Predictors of left atrial thrombus or spontaneous echo contrast in non-valvular atrial fibrillation

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Objectives: To examine the incidence and predictors of left atrial thrombus (LAT) or spontaneous echo-contrast (SEC) in patients with nonvalvular atrial fibrillation (AF).

Methods: This study included 2112 consecutive Chinese patients (mean age 57.5 ± 11.8 years; 32% female; 1750 paroxysmal AF) referred for catheter ablation or direct current cardioversion of nonvalvular AF during July 2007 and February 2014 at Guangdong General Hospital.

Results: TEE revealed LAT/SEC in 134 cases (6.3%). In a Binary Logistic regression analysis, independent predictors of LAT/SEC included persistent AF and long-standing persistent AF (OR=2.4, 95% CI 1.6-3.7), prior stroke or TIA (OR=1.6, 95% CI 1.1-2.3), cardiomyopathy (OR=3.5, 95% CI 1.9-6.6), left ventricular ejection fraction (LVEF) $\leq 40\%$ (OR=5.0, 95% CI 2.0-12.4), left atrial diameter (LAD) ≥ 40 mm (OR=5.2, 95% CI 3.4-7.8).

Conclusions: A larged LAD and decreased LVEF are the strongest independent predictors of LAT/SEC. They may be useful in predicting embolic events in patients with nonvalvular AF.

GW25-e2133

Complications Associated with Pacemaker Installation in Infants and Follow-up Data Analysis

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Objectives: We conducted a review analysis on the installation of infant pacemakers and follow-up complications.